

**Bonneville Power Administration
Fish and Wildlife Program FY99 Proposal**

Section 1. General administrative information

**Volunteers Rear 500,000 Net Pen Rbt Above
Grand Coulee Dam**

Bonneville project number, if an ongoing project 9500900

Business name of agency, institution or organization requesting funding
Lake Roosevelt Development Association

Business acronym (if appropriate) LRDA

Proposal contact person or principal investigator:

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Subcontractors.

Organization	Mailing Address	City, ST Zip	Contact Name

NPPC Program Measure Number(s) which this project addresses.

10.8, 10.8B, 10.8B3, 10.8B.4

NMFS Biological Opinion Number(s) which this project addresses.

10.8B.4

Other planning document references.

Upper Columbia Mainstem --Rainbow trout Target Fish population

Subbasin.

Upper Columbia Mainstem (Lake Roosevelt) above Grand Coulee Dam

Short description.

Enhance the harvest of rainbow in waters above Grand Coulee Dam by rearing 500,000 net pen Rbt with the cooperation of volunteers

Section 2. Key words

Mark	Programmatic Categories	Mark	Activities	Mark	Project Types
	Anadromous fish	+	Construction		Watershed
X	Resident fish	+	O & M		Biodiversity/genetics
	Wildlife	X	Production		Population dynamics
	Oceans/estuaries		Research		Ecosystems
	Climate		Monitoring/eval.		Flow/survival
	Other	+	Resource mgmt		Fish disease
			Planning/admin.	X	Supplementation
			Enforcement		Wildlife habitat enhancement/restoration
			Acquisitions		

Other keywords.

Supplementation; Substitution

Section 3. Relationships to other Bonneville projects

Project #	Project title/description	Nature of relationship
9104600	Spokane Tribal Hatchery	source of net pen Rbt
9404300	Lake Roosevelt Monitoring	tagging/monitoring/creel counts
9104700	Sherman Creek Hatchery	source of Rbt

Section 4. Objectives, tasks and schedules**Objectives and tasks**

Obj 1,2,3	Objective	Task a,b,c	Task
1	develop volunteer base	a	sign up volunteers
		b	meet with/organize volunteers
		c	inform/aid volunteers
2	maintain/operate net pens	a	repair pens, docks, anchors, cables
		b	build/replace pens/docks
		c	organize work days/order materials
3	Successfully rear Rbt	a	stock fish in pens

		b	monitor size/food/temp/disease
		c	order/distribute fish food
		d	organize/schedule volunteer feeders
4	develop plan of operation	a	follow plan of Lake Roosevelt HT group
5	provide 180,000 harvested Rbt annually		release fish at appropriate time based on water conditions
6	administrate the program according to Biological objectives for Lake Roosevelt	a	follow objectives set forth for the net pen program under the resident fish proposals

Objective schedules and costs

Objective #	Start Date mm/yyyy	End Date mm/yyyy	Cost %
1	9/1998	9/2003	20.00%
2	9/1998	9/2003	34.00%
3	9/1998	9/2003	12.00%
4	9/1998	9/2003	10.00%
5	9/1998	9/2003	0.00%
6	9/1998	9/2003	24.00%
			TOTAL 100.00%

Schedule constraints.

changes in biological objectives for fish production

Completion date.

may depend on the success of the programs designed to enhance the wild stock rainbow in Lake Roosevelt as well as kokanee program

Section 5. Budget

FY99 budget by line item

Item	Note	FY99
Personnel	coordinator and secy/treas	\$45,000
Fringe benefits		\$7,430
Supplies, materials, non-expendable property	office supplies, telephone, insurance	\$7,800
Operations & maintenance	build/repair/replace pens	\$28,120
Capital acquisitions or improvements (e.g. land, buildings, major equip.)	truck lease	\$10,000

PIT tags	# of tags:	
Travel	mileage/lodging/meals	\$1,425
Indirect costs		
Subcontracts		
Other		
TOTAL		\$99,775

Outyear costs

Outyear costs	FY2000	FY01	FY02	FY03
Total budget	\$96,000	\$98,000	\$98,000	\$97,000
O&M as % of total	30.00%	29.00%	30.00%	31.00%

Section 6. Abstract

Section 7. Project description

a. Technical and/or scientific background.

Project Description: The 1994 FWP allows for the mitigation for salmon and steelhead runs that have been lost to the area above Grand Coulee Dam. Lake Roosevelt net pen program is being funded as a resident fish substitution project under Section 10.8B 1994 FWP. The program substitutes for loss of salmon and steelhead, but also for wild stock rainbows which were declining due to fishing pressure and habitat problems in spawning areas. The release of 500,000 net pen reared rainbow provides anglers with a substitute for salmon and reduces pressure on wild stocks of rainbow. The net pen program is operated according to and in conjunction with the biological objectives set forth in the FWP 1994, Sec 10.8B.4. Utilizing rainbow trout rearing by net pens to help rebuild wild stock populations is also a CBFWA subbasin management objective.

b. Proposal objectives.

Proposal Objectives: The primary objective of the net pen program is to use volunteers to rear 500,000 rainbow annually for anglers on Lake Roosevelt by using net pens located at various sites on the lake. This should provide an annual harvest of up to 180,000 rainbow. By releasing net pen rainbow, the angler pressure on native wild stocks will be reduced, allowing them to re-establish. Net pens allow for containment of rainbow during draw down of the reservoir in months where entrainment is most likely. It also allows for growth of fingerlings to a size which enables them to more readily escape predation. Evaluation and measurement of outcomes as well as other data collection is

the function of the Lake Roosevelt monitors. Through the use of creel counting and interviews with anglers, data is collected on harvest by anglers. Up to 20,000 net pen rainbow are tagged annually at sites on the lake. The data collected from this plus electro shocking, gill netting, and trapping allows the monitors to get an overview of fish movements, habits, migrations, and harvest records. Eastern Washington University, under the direction of Dr. Al Scholz, also monitors fish activities on the lake, focusing on creel counts and kokanee production. Entrainment study is being conducted by Richard LeClerc at the Grand Coulee Dam site. Using transducers at gates to the turbines and vertical gill nets at the forebay, he is gathering information concerning peak entrainment conditions.

c. Rationale and significance to Regional Programs.

Rationale and significance to Regional Programs: Under resident fish substitutions (FWP) 10.8 the council has concluded that 1) mitigation in blocked areas is appropriate where salmon and steelhead were affected by the development and operation of the hydroelectric projects; 2) in kind mitigation is not a viable option, therefore resident fish may be substituted. The rationale of using the net pen program to rear rainbow as a substitute resident fish is partly based on results already documented by the Lake Roosevelt Monitors as a result of the volunteer net pen program developed early on to enhance fishing on Lake Roosevelt. The net pens were first established in the 1970's by a volunteer group. The harvest of these fish by anglers became very popular. The council program included plans to hire a coordinator and expand the net pen production to 500,000 rainbow trout annually. The target harvest by anglers is expected to be 180,000 annually. The rainbow trout net pen program is a partner in the total program for the biological objectives for Lake Roosevelt. Other related programs include kokanee production and habitat improvement for wild stock rainbow. By rearing net pen rainbow or kokanee from September through May, entrainment can be reduced during draw down and time is allowed for growth to reduce predation. Finishing off the fish in net pens frees up more raceways in the Spokane Tribal and Sherman Creek Hatcheries.

d. Project history

Project History: The net pen program began as an all volunteer program that prospered for a while but ran into funding and organizational difficulties. The group known as Lake Roosevelt Development Association applied to CBFWA and the Northwest Power Planning Council for assistance. The project was approved in 1994-95 as LRDA (sponsor) and Lake Roosevelt Trout Net Pens (title). The project number is 9500900. Semi-annual and annual reports are sent to project supervisors as well as Scope of Work, Objectives, Tasks, and Time Lines to complete said tasks. Quarterly reports are given at the Lake Roosevelt management meetings or HTC meetings. Summary reports on planting of fish per site and releasing records are also sent to BPA project supervisor. Adaptive management plans are discussed during Lake Roosevelt management team meetings with include members from Spokane Tribal Hatchery, WSDFW, BPA, Sherman Creek Hatchery, Net Pen Program, Colville Tribal FWL managers, and Eastern

Washington University kokanee program directors, and the Lake Roosevelt monitors and data collectors. The meetings lay plans of operation according to the biological objectives. The primary function is to coordinate activities and inform each other of progress, project reports, and need for adaptation as needed. The LRDA net pen program has been operating as a funded program since 1994-95. To date, the moneys spent per year are: 1995--\$62,863; 1996--\$115,000; 1997--\$23,463 balance, \$72,137 obligated; 1998--\$100,000 draft budget, for an average per year budget of \$83,333.

e. Methods.

Methods: Objective I. Build a volunteer base: Tasks include meetings to recruit volunteers at the various sites on the lake where net pens are located. Building interest and networking are used to gain support for the net pen program. Rewards and recognition are important in keeping motivation and interest at a high level. Objective II. Evaluate needs and work to be done: Tasks include inventorying maintenance requirements, repair and materials needed of all nine sites. This includes net pen frames, nets, docks, anchors, cable, and other facilities at each site. Setting up work schedules for each site and notifying volunteers is a matter of organizing the calendar of events. Objective III. Coordinate site preparation: The tasks involve ordering needed materials and equipment, having on hand all items needed to complete site preparation and maintenance projects. It is the function of the net pen coordinator to oversee and participate in all construction and repair at each site. Special use permits must also be secured and recorded with proper agencies. Objective IV. Work cooperatively with the Lake Roosevelt Management Team (HTC) concerning the biological objectives: Tasks include meeting quarterly to plan activities such as planting schedules and calendar of events. Scheduling feed orders and release dates are part of the management team decisions. The net pen coordinator also schedules regular LRDA meetings apprising members of activities. Description of Method of Operation LRDA net pens: The basic operation is based on volunteer grass root participation in enhancing the Lake Roosevelt fishery. The coordinator works closely with the volunteers to complete the necessary tasks. The method used in the net pen program involves building 20' square frames from 8' x 20' PVC pipe filled with foam. Bottom nets are 20' square and 14' deep hung inside the frame and covered with bird netting. The net pens are built from scratch by volunteers as are the docks. Anchors are set usually in protected areas. Each site has from 2 to 8 net pens based on available space. Fish are trucked in and piped to the pens at landing sites near the destination of the net pen. The Spokane Tribal Hatchery and the Sherman Creek Hatchery deliver fish to the pens. Volunteers feed fish from September through May. Fish are released in early June. Kettle Falls net pens are able to hold fish over the summer months in reduced numbers. Fish food is provided by the WSDFW as part of a cooperative program. The food is distributed to seven locations on the lake for easy access by volunteer feeders. In June all nets are pulled, washed, and hung up to dry. Most repair projects are performed during summer months on a site by site basis using volunteer workers. The Lake Roosevelt monitors and data collection group monitor conditions on the lake and inform the management team of flow predictions, food

conditions, nitrogen levels, etc. to help us in operational decisions. They also tag fish and conduct interviews with anglers and creel counts.

f. Facilities and equipment.

Facilities and equipment: By nature the net pen program has operated with volunteer efforts and mostly hand-me-down equipment. We have been frugal in our operation since acquiring a grant. We don't mind. We are thankful to have the means to order building materials and nets, etc. without having to fundraise and collect aluminum cans. Most work is done on site and most volunteers bring their own hammers, drills, saws and often provide their own boats. We have acquired a generator, a fire pump and hose to wash nets on site. We have a bander to band frames on the net pen floats. We have replaced lost or broken tools and have acquired a new skill saw and 12 volt drill for building docks. This past summer ('97) we were able to transfer two boats from the USFW surplus to our program and acquired a motor from the Lake Roosevelt Monitors BIA surplus. They required much repair and overhaul, but are being pressed into service to relieve volunteers of the burden of using personal boats and equipment. The net pen coordinator uses his own 14' aluminum boat and 24' pontoon boat. The office is in my home, and the computer used is a personal one. We have an 8 x 12 foot storage shed for supplies. We use automatic feeders at some remote sites and have purchased 22 feeders with 2 held in reserve. Inventory shows 5 nets and tops, an assortment of bolts, chain, cable, and rope.

g. References.

References: Underwood , Keith and Shields, Lake Roosevelt Fisheries Monitoring Program. 1996. 3.0 Results; Creel Data; pp 17-26; Economic Value; p 27.
Northwest Power Planning Council. Proposed Resident Fish and Wildlife Amendments to the Columbia River Basin Fish and Wildlife Program. 1995. Section 10.8, p 24, para 15; Section 10.8B.3, p 25, para 42 and p 27 para 27 ; Section 10.8B.4, p 27, para 31.
LeClerc, Richard. Grand Coulee Dam Entrainment Comparison. 1997 vs 1996.

Section 8. Relationships to other projects

Permits for the net pens and docks must be acquired by request from the Lake Roosevelt U.S. Park Service in the form of a special use permit. Permits regarding location must be acquired from the Corps of Engineers. The LRDA net pen program works closely with other cooperating programs. These programs include the Spokane Tribal Hatchery Rainbow and Kokanee production program which supplies fingerlings to the net pen program and also to Sherman Creek Hatchery. The Sherman Creek Hatchery in turn provides rainbow to the northern most net pens. The decisions involving kokanee and rainbow stocking of Lake Roosevelt also include the Colville Tribal concerns of wild stock kokanee and rainbow. The decisions concerning the operation of the Lake Roosevelt Resident fish programs are coordinated by quarterly meetings involving Washington State Fish and Wildlife managers, Spokane Tribal Hatchery managers,

Sherman Creek Hatchery managers, BPA wildlife managers, Eastern Washington University kokanee project managers, LRDA net pen coordinator, Lake Roosevelt monitors and data collectors, and the Colville Tribal Fish and Wildlife managers. The function of this group is to coordinate activities regarding plants into the lake or the net pens. Concern is given to timing, tagging, electro shocking, data collection, and concerns affecting the fishery such as drawdown schedules, etc. Most of the above mentioned programs are included in the Power Planning Council's FWP

Section 9. Key personnel

Secretary/Treasurer: Kaye Anderson--780 hours annually. Duties are to serve as secretary for all LRDA meetings, to keep accurate records, keep board members informed of meeting agendas, keep minutes. As treasurer, she accurately reports all expenditure records, pays bills, and keeps financial records for all meetings. Qualifications: Kaye has been finance director and executive director for Columbia School District for approximately 25 years. She was acting secretary for LRDA as a volunteer previous to receiving a grant.

President of LRDA: Roy Graffis, volunteer. Duties: to conduct LRDA meetings regularly in the presence of board members and guests. Qualifications: Roy has a masters degree in education and served as Superintendent of schools for the Columbia School District. He was also a charter member of LRDA and was instrumental in developing the net pens at Hunter Campground on Lake Roosevelt.

Net Pen Coordinator: Gene Smith--260 days at 8 hours. Duties: To recruit volunteers at the various net pen sites on the lake; to mobilize volunteers into work groups for each site; to coordinate all activities involved in building, maintaining, and locating pens at strategic locations along the 150 mile stretch of Lake Roosevelt; to oversee management of all net pen operations including scheduling activities and timelines for stocking fish, feeding schedules, and releasing schedules; to work closely with the managers of related programs according to FWP measures and the Lake Roosevelt Biological opinions. Qualifications: B.S. Ed degree, University of Idaho, 1961. M.S. Ed degree, University of Idaho, 1964. M.S. + 45 credits with emphasis in biology. 31 years teacher/Athletic Director/football and basketball coach. 29 years instructing biology, anatomy, zoology at Reardan High School. 29 years as athletic director working with booster club volunteers in fundraising, overseeing K-12 athletic programs, coaches, and funding for the Reardan School District.

Section 10. Information/technology transfer

Blueprints of net pen construction and cost analysis has been shared with many interested parties on the West Coast and in Canada. Fishery enhancement groups, clubs, and private resort owners have requested and received information on net pen construction and organization of volunteers as well as networking cooperative agencies. Plans have been sent to California Kokanee enhancement organizations, Canadian Fishery directors, Washington Water Power Wildlife directors, and Eastern Washington University Wildlife and Fishery Department. A booth to disseminate general information is shared with BPA

and other Lake Roosevelt projects at the Big Horn Show in Spokane in March. Meetings are attended with speaking engagements to explain the operation of the net pen program and to solicit volunteers.